



AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (currently amended) A soft gel encapsulation machine comprising:
 - a fill mechanism operable to deliver a fill material;
 - at least a pair of dies; and
 - a control device operable to control operation of said fill mechanism and said dies[[; and]]₁
~~a serial communication ring linking said fill mechanism and said dies to said control device~~
wherein said control device is a programmable controller that uses a first movement relationship between said fill mechanism and a programmed reference, uses a second movement relationship between said dies and said programmed reference, and controls operation of said fill mechanism and said dies based on said first and second movement relationships to said programmed reference.

2. (currently amended) The soft gel encapsulation machine of claim 1, further comprising a pair of casting drums operable to form a sheet material from a flowable mass, wherein said control device uses a third movement relationship between said casting drums and said programmed reference and is operable to control operation of said casting drums ~~and said serial communication ring links said casting drums to said control device based on said third movement relationship.~~

3. (original) The soft gel encapsulation machine of claim 2, further comprising:

a plurality of servomotors operable to drive said fill mechanism, said casting drums and said dies;

a plurality of servo controllers operable to control said servomotors; and said dies operably rotate and include sets of capsule forming cavities; said fill material including an ingestible pharmaceutical.

4. (cancelled)

5. (currently amended) The soft gel encapsulation machine of claim [[1]]81, wherein said serial communication ring includes fiber optic cables.

6. (original) A capsule machine comprising:

 a fill mechanism operable to deliver a fill material;

 a first servomotor operable to mechanically independently drive said fill mechanism;

 at least first and second dies, said first die being driven by a servomotor and said second die being mechanically linked to said first die with movement of said first die causing movement of said second die;

 a second servomotor operable to mechanically independently drive said first die; and

 a control device operable to control operation of said first and second servomotors.

7. (original) The capsule machine of claim 6, further comprising:

 first and second casting drums operable to form a sheet material from a flowable mass; and

 third and fourth servomotors each respectively operable to drive said first and second casting drums independently of one another,

 wherein said control device controls operation of said first, second, third and fourth servomotors independently of one another.

8. (currently amended) The capsule machine of claim 6, wherein the fill material is mechanism delivers a medicine.

9. (original) The capsule machine of claim 6, wherein said fill material mechanism includes a plurality of opposing pumps that are driven by said first servomotor.

10. (original) The capsule machine of claim 6, wherein said control device has a virtual gear, said first and second servomotors each have respective first and second relationships to said virtual gear and said controller operates said first and second servomotors based on said first and second relationships to said virtual gear.

11. (currently amended) A capsule machine comprising:

 a fill mechanism operable to deliver a fill material;

 dies operable to form soft capsules from at least two sheets of material;

 a pressure device operable to apply pressure between said dies

independently of operation of said fill mechanism; and

 a controller operable to control said dies and said pressure device,

 wherein said controller monitors a pressure between said dies during

operation of said dies.

12. (original) The machine of claim 11, wherein said pressure device includes a regulator operable to adjust said pressure applied between said dies and to send a signal to said controller indicative of said pressure being applied.

13. (original) The machine of claim 11, wherein said pressure device includes a fluidic cylinder.

14. (original) The machine of claim 11, further comprising a display device and said pressure being monitored by said controller is displayed on said display device.

15. (original) The machine of claim 11, wherein said controller records said pressure.

16. (withdrawn) A soft capsule machine comprising:

- (a) a wedge operable to insert a fill material between two or more sheets; and
- (b) a fill mechanism operable to supply said fill material to said wedge, said fill mechanism including:
 - (i) a pump assembly having at least one pump operable to pump said fill material to said wedge;
 - (ii) a drive mechanism operable to drive said pump assembly, wherein said pump assembly and said drive mechanism are contained in separate housings deterring said fill material in said pump from contaminating said drive mechanism.

17. (withdrawn) The soft capsule machine of claim 16, wherein said pump assembly includes a slide valve that controls whether said pumps are filling with said fill material or injecting said fill material and said drive mechanism imparts a reciprocating linear motion to said pumps and a reciprocating linear motion to said slide valve.

18. (withdrawn) The soft capsule machine of claim 16, further comprising a servomotor operable to drive said drive mechanism.

19. (withdrawn) A soft capsule machine comprising:
a wedge operable to insert a fill material between at least two sheets; and
a pump assembly operable to pump said fill material to said wedge, said
pump assembly including at least one pump;
a catch tray positioned beneath said pump, said catch tray operable to
catch fill material that leaks from said pump and direct said caught fill material to a
predetermined location.

20. (withdrawn) The soft capsule machine of claim 19, wherein said pump
assembly is positioned in a housing, said housing contains a lubricant and said tray
deters fill material leaking from said pump from contaminating said lubricant in said
housing.

21. (withdrawn) The soft capsule machine of claim 20, wherein said
predetermined location is external to said housing.

22. (withdrawn) The soft capsule encapsulation machine of claim 19, wherein
said at least one pump is one of a plurality of opposing plunger-type pumps.

23. (withdrawn) A soft capsule machine comprising:

 a wedge operable to insert a fill material between at least two sheets;

 a pump assembly operable to pump said fill material to said wedge, said pump assembly being driven in a reciprocating motion; and

 a lubricating pump operable to supply a lubricant to said pump assembly, said lubricating pump being driven by said reciprocating motion of said pump assembly.

24. (withdrawn) The soft capsule machine of claim 23, wherein said pump assembly includes:

 a plurality of pumps operable to pump said fill material to said wedge assembly, said pumps being driven in a first reciprocating motion; and

 a slide valve operable to control an intake and discharge of said pumps, said slide valve being driven in a second reciprocating motion,

 wherein said lubricating pump is driven by one of said first and second motions and supplies a lubricant to said pump assembly.

25. (withdrawn) The soft capsule machine of claim 24, wherein said lubricating pump is driven by said second motion.

26. (withdrawn) The soft capsule machine of claim 23, further comprising a housing and wherein said pump assembly is located in said housing, a lubricant is in said housing, and said lubricating pump is operable to pump said lubricant in said housing to said pump assembly in response to said reciprocating motion of said pump assembly.

27. (withdrawn) A soft capsule machine comprising:

a wedge operable to insert a fill material between at least two sheets;

a pump assembly operable to pump said fill material to said wedge, a first portion of said pump assembly being driven in a first reciprocating motion and second portion of said pump assembly being driven in a second reciprocating motion; and

a drive mechanism operable to impart said first and second reciprocating motions to said pump assembly, said drive mechanism including:

(a) a crankshaft operably rotating about an axis;

(b) a first driving member coupled to said crankshaft;

(c) stroke members positioned on opposite sides of said first driving member, said stroke members being spaced apart a distance that is adjustable and adjustment of said distance changing a stroke of said first motion imparted by said drive mechanism to said pump assembly; and

(d) a second driving member between said stroke members, said second driving member being coupled to said pump assembly and imparting said first motion to said pump assembly.

28. (withdrawn) The soft capsule machine of claim 27, wherein as said crankshaft rotates said first driving member drives said stroke members during a portion of said rotation of said crankshaft and said stroke members drive said second driving member.

29. (withdrawn) The soft capsule machine of claim 28, wherein said portion of said rotation of said crankshaft that said stroke members are driven varies with adjustment of said distance between said stroke members.

30. (withdrawn) The soft capsule machine of claim 27, further comprising at least one connecting member coupling said first driving member to said crankshaft.

31. (withdrawn) The soft capsule machine of claim 27, further comprising a cam pulley operable to impart said second motion to said pump assembly with rotation of said crankshaft.

32-33. (cancelled)

34. (original) A capsule machine comprising:

 a first moveable member;

 a first servomotor operable to mechanically independently drive said first moveable member; and

 a control device operable to control operation of said first servomotor, said control device having a virtual gear,

 wherein said first servomotor has a first relationship with said virtual gear and said controller operates said first servomotor based on said first relationship.

35. (original) The capsule machine of claim 34, further comprising:

 a second moveable member; and

 a second servomotor operable to mechanically independently drive said second moveable member, said second servomotor having a second relationship with said virtual gear,

 wherein said controller operates said second servomotor based on said second relationship.

36. (original) The capsule machine of claim 35, wherein said first moveable member is a fill mechanism and said second moveable member is at least one die.

37. (original) The capsule machine of claim 34, wherein said first relationship can be changed.

38-61. (cancelled)

62. (previously presented) A soft gel encapsulation machine comprising:
a fill mechanism operable to deliver a fill material;
at least a pair of dies;
a virtual relationship between said fill mechanism and said dies;
a control device operable to control operation of said fill mechanism and
said dies based on said virtual relationship; and
a serial communication ring linking said fill mechanism and said dies to
said control device.

63. (previously presented) The soft gel encapsulation machine of claim 62,
further comprising a first servomotor operable to drive said fill mechanism and wherein
said virtual relationship includes a virtual gear and said first servomotor has a first
relationship with said virtual gear and said controller operates said first servomotor
based on said first relationship.

64. (previously presented) The soft gel encapsulation machine of claim 63,
further comprising a second servomotor operable to drive said dies, said second
servomotor has a second relationship with said virtual gear and said controller operates
said second servomotor based on said second relationship.

65. (previously presented) The soft gel encapsulation machine of claim 62, wherein said virtual relationship can be changed.

66. (currently amended) The soft gel encapsulation machine of claim 1, wherein said fill material includes mechanism delivers a liquid.

67. (currently amended) The soft gel encapsulation machine of claim 1, wherein said fill material includes mechanism delivers at least one of a paint and dye substance.

68. (currently amended) The soft gel encapsulation machine of claim 1, wherein said fill material includes mechanism delivers an ingestible pharmaceutical.

69. (previously presented) The capsule machine of claim 6, further comprising a virtual relationship between said fill mechanism and said dies and wherein said control device controls operation of said first servomotor based on said virtual relationship.

70. (previously presented) The capsule machine of claim 69, wherein said virtual relationship includes a virtual gear, said fill mechanism has a first relationship with said virtual gear, said dies have a second relationship with said virtual gear, and said control device controls operation of said first servomotor based on said first relationship.

71. (currently amended) The capsule machine of claim 6, wherein said fill material ~~includes~~ mechanism delivers a liquid.

72. (currently amended) The capsule machine of claim 6, wherein said fill material ~~includes~~ mechanism delivers at least one of a paint and dye substance.

73. (currently amended) The capsule machine of claim 6, wherein said fill material ~~includes~~ mechanism delivers an ingestible pharmaceutical.

74. (previously presented) The machine of claim 11, wherein said fill mechanism is operable to deliver said fill material to cavities in said dies.

75. (currently amended) The machine of claim 74, wherein said fill material ~~includes~~ mechanism delivers an ingestible pharmaceutical.

76. (currently amended) The machine of claim 74, wherein said fill material ~~includes~~ mechanism delivers a liquid.

77. (currently amended) The machine of claim 74, wherein said fill material ~~includes~~ mechanism delivers at least one of a paint and dye substance.

78. (currently amended) The machine of claim 74, wherein said fill material ~~includes~~ mechanism delivers a medicine.

79. (previously presented) The machine of claim 11, wherein said controller continuously records said pressure.

80. (previously presented) The machine of claim 11, wherein said controller records said pressure when a change in die pressure is performed.

81. (new) The soft gel encapsulation machine of claim 1, further comprising a serial communication ring linking said fill mechanism and said dies to said control device.

82. (new) The soft gel encapsulation machine of claim 1, wherein the first and second movement relationships with the programmed reference are numerical movement relationships.